6. Weyers S, Selvaggi G, Monstrey S, et al. Two-stage versus one-stage sex reassignment surgery in female-to-male transsexual individuals. *Gynecol Surg* 2006;**3**:190—4.
7. Felici N, Felici A. A new phalloplasty technique: the free anterolateral thigh flap phalloplasty. *J Plast Reconstr Aesthet Surg* 2006 Feb;**59**:153—7.
8. Hage JJ, van Turnhout AA. Long-term outcome of metaidoioplasty in 70 female-to-male transsexuals. *Ann Plast Surg* 2006 Sep;**57**:312—6.
9. Dabernig J, Chan LK, Schaff J. Phalloplasty with free (septocutaneous) fibular flap sine fibula. *J Urol* 2006 Nov;**176**:2085—8.
10. Revol M, Servant JM, Banzet P. Surgical treatment of male-to-female transsexuals: a ten-year experience assessment. *Ann Chir Plast Esthet* 2006 Dec;**51**:499—511 [Epub 2006 Apr 19].
11. Selvaggi G, Monstrey S, Ceulemans P, et al. Genital sensitivity after sex reassignment surgery in transsexual patients. *Ann Plast Surg* 2007 Apr;**58**:427—33.
12. Vesely J, Hyza P, Ranno R, et al. New technique of total phalloplasty with reinnervated latissimus dorsi myocutaneous free flap in female-to-male transsexuals. *Ann Plast Surg* 2007 May; **58**:544—50.
13. Ranno R, Veselý J, Hýza P, et al. Neo-phalloplasty with reinnervated latissimus dorsi free flap: a functional study of a novel technique. *Acta Chir Plast* 2007;**49**:3—7.
14. Perovic SV, Djinovic R, Bumbasirevic M, et al. Total phalloplasty using a musculocutaneous latissimus dorsi flap. *BJU Int* 2007 Oct;**100**:899—905 [discussion: 905].
15. Stanojevic DS, Djordjevic ML, Milosevic A, et al. Belgrade Gender Dysphoria Team. Sacrospinous ligament fixation for neovaginal prolapse prevention in male-to-female surgery. *Urology* 2007 Oct;**70**:767—71.
16. Kim SK, Lee KC, Kwon YS, et al. Phalloplasty using radial forearm osteocutaneous free flaps in female-to-male transsexuals. *J Plast Reconstr Aesthet Surg* 2009;**62**:309—17.
17. Namba Y, Sugiyama N, Yamashita S, et al. Vaginoplasty with an M-shaped perineo-scrotal flap in a male-to-female transsexual. *Acta Med Okayama* 2007 Dec;**61**:355—60.
18. Leriche A, Timsit MO, Morel-Journel N, et al. Long-term outcome of forearm flee-flap phalloplasty in the treatment of transsexualism. *BJU Int*; 2008 Jan 8 [Epub ahead of print].

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COMMENTARY

Evaluation of surgical procedures for sex reassignment: a systematic review

J. Joris Hage

Department of Plastic and Reconstructive Surgery at the Netherlands Cancer Institute-Antoni van Leeuwenhoek Hospital, Plesmanlaan 121, NL-1066 CX, Amsterdam, The Netherlands

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Sutcliffe et al. are to be applauded for having initiated the immense task of assessment of study design and quality available on the outcome of 13 distinctly defined gender confirming surgical procedures over the 26-year period from 1980 through 2005.[1] Based on their work, the authors conclude that the magnitude of benefit and harm of these procedures cannot be estimated accurately using the currently available level of evidence. Although I tend to agree with this observation, I have not been able to reproduce their study and its outcome. This seems to be caused largely by flaws of the study's methodology or, possibly, flaws of the description of that methodology.

As such, I could not reproduce the authors' selection of references to be screened. Using the 13 core procedures listed in their Figure 1, merely a PubMed search yielded 45,217 references published from 1980 through November 2005. Entering the comprehensive list of additional terms related to gender confirming surgery provided by the authors in the text yielded 97,622 references. Omitting the terms that the authors wrongly related to such surgery (e.g. transvestitism etcetera, cross-dresser etcetera, and intersexuality),[2] the PubMed search still yielded 94,241 references. I fail to understand just how the authors reduced these large numbers of references to the 1170 that were actually screened.

Second, I found none of the included studies concerned with male-to-female surgery as listed in Table 1 to address the inclusion criteria set by the authors as all reported on the outcome of multiple, combinedly performed surgical procedures and not on the outcome of solely the core procedure mentioned. Obviously, all primary vaginoplasties over the 26-year period have routinely been performed in combination with penectomy, orchidectomy, and labiaplasty. Since 1996, clitoroplasty has routinely been included in this one-stage procedure by almost all gender confirming surgeons. Secondary or salvage vaginoplasties build on on the result of previous efforts. Likewise, most (not 'some') of the female-to-male core surgical procedures are completed

E-mail address: j.jorishage@inter.nl.net (J.J. Hage).

along with other surgery. In this light, the authors rightly observed that 'studies of individual techniques.[..]. provide information on purchasing decisions that are less realistic, as some procedures are unlikely to be purchased in isolation.' This may easily be a gross understatement as it is anatomically and surgically unjustifiable and often, even, unethical to offer certain procedures separately. Consequently, I fail to understand on what basis some studies were actually included by the authors, while others were not. This misunderstanding may further be explained by the authors' failure to mention what hypotheses were actually tested in the studies they reviewed.

Then there are some flaws of semantics or definitions. As such, it should be obvious that the patients' sex rather than their gender is reassigned by surgery. Hence, the term 'sex reassignment surgery' or, even better, 'gender confirming surgery' is to be preferred over the one used by the authors: 'gender reassignment surgery'. Although I agree with the authors that the term 'transsexuality' wrongly suggests that this form of extreme gender dysphoria implies a sexual orientation, I fear that 'transsexism' equally wrongs the patients as their dysphoria has no association what so ever with any discrimination on the basis of sex. Moreover, are we then to call gender dysphoric people, 'transsexists'?

Next, the authors' apparent confusion regarding the prevalence of transsexuality may easily be explained by the misconception that the prevalence of gender confirming surgery is representative for the prevalence of transsexuality. It is not, because the coming out of transsexuals is largely linked to the level of acceptance of gender dysphoria, the availability of treatment, and the outcome of surgery in the transsexuals' social environment. The authors' observation that many transsexuals do not 'wish' to undergo any surgery adds to this misconception; transsexuality, by DSM-definition, is manifested by the preoccupation with getting rid of primary and secondary sex characteristics.[2] In other words, true transsexuals certainly urge to undergo surgery, but they might not do so because it is unavailable or inadequate to them. These issues are raised not as mere semantics but because they touch the very hearth of understanding transsexuality and, more important, transsexuals.

Furthermore, the definition of urethroplasty used by Sutcliffe et al. differs from what gender confirming surgeons (such as Rohrmann and Jakse[3] who were cited by the authors) define as a urethroplasty. In the current context, urethroplasty refers to the surgical lengthening of the female urethra up to the level of the neophallus (pars fixa urethrae),[3–5] through the length of the neophallus (pars pendulans),[6] or both.[7] Repair of defects in the wall of the urethra is simply referred to as 'fistula repair'.[3] This misconception may have led to the authors' failure to trace adequate data on urethroplasty in female-to-male transsexuals.

Based on these flaws and misconceptions, I cannot but infer that Sutcliffe and his co-workers did not succeed to provide any sound evidence for their conclusions. Still, I fully agree with the authors, who admittedly could not accurately estimate the outcome of gender confirming surgery, that in the majority of studies a large number of patients reportedly experience a successful outcome in terms of subjective well being, cosmesis, and sexual function.

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None.

References

1. Sutcliffe PA, Dixon S, Akehurst RL, et al. Evaluation of surgical procedures for sex reassignment: a systematic review. *J Plast Reconstr Aesthet Surg* 2009;**62**:294–306.
2. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. - Text Revision. Arlington, VA: American Psychiatric Publishing; 2000.
3. Rohrmann D, Jakse G. Urethroplasty in female-to-male transsexuals. *Eur Urol* 2003;**44**:611–4.
4. Bouman FG. The first step in phalloplasty in female transsexuals. *Plast Reconstr Surg* 1987;**79**:662–4.
5. Hage JJ, Bouman FG, Bloem JJAM. Construction of the fixed part of the neourethra in female-to-male transsexuals: experience in 53 patients. *Plast Reconstr Surg* 1993;**91**:904–10.
6. Hage JJ, Bouman FG, Bloem JJAM. Preconstruction of the pars pendulans urethrae for phalloplasty in female-to-male transsexuals. *Plast Reconstr Surg* 1993;**91**:1303–7.
7. Hage JJ, Bloem JJAM. Review of the literature on construction of a neo-urethra in female-to-male transsexuals. *Ann Plast Surg* 1993;**30**:278–86.

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